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The Effects of Empathy on Vicarious Trauma in the Visual Language Interpreter

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by

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Abstract

The current study examined the relationship between vicarious trauma and emotional empathy and cognitive empathy in visual language interpreters (VLIs). The study also included exploratory research to test the relationship between anxiety and vicarious trauma. A total of 85 Canadian VLIs were surveyed (11 male, 74 female). Participants completed four questionnaires: a demographic questionnaire, Bride's 17-item Secondary Traumatic Stress scale (STSS), Beck's 21-item Anxiety Inventory, and Davis' 28-item Interpersonal Reactivity Index. Surveys were completed using Qualtrics, an online survey tool hosted by Western University. Results revealed no significant correlation between cognitive empathy and vicarious trauma. Results revealed a weak positive correlation between emotional empathy and vicarious trauma, initially indicating that VLIs with high personal distress also experience high levels of vicarious trauma. Results of the exploratory analysis revealed a moderate positive relationship between anxiety and vicarious trauma, indicating that vicarious trauma and anxiety are potentially correlated in a similar way as posttraumatic stress disorder (PTSD) and anxiety symptoms and further supporting that vicarious trauma is as serious as PTSD. Regression analyses found that emotional empathy was no longer a significant predictor of vicarious trauma after controlling for anxiety.

The Effects of Empathy on Vicarious Trauma in the Visual Language Interpreter

Professionals who are exposed to the traumatic experiences of others risk incurring the same negative effects of that trauma, a phenomenon labeled "vicarious traumatization" (McCann & Pearlman, 1990). Vicarious traumatization, also called secondary traumatic stress, is serious, prolonged anxiety felt by an individual in response to witnessing or listening to others' explicit accounts of trauma, and can result in similar symptoms as posttraumatic stress disorder (PTSD) (Lerias & Byrne, 2003; Blair & Ramones, 1996; McCann & Pearlman, 1990). Previous studies have analyzed professions that encounter traumatized individuals on a daily basis such as psychotherapists, social workers, and paramedics (Adams & Riggs, 2008; Badger, Royse, & Craig, 2008; Regehr, Goldberg, & Hughes, 2002). The Canadian visual language interpreter (VLI) is required to work with possibly traumatized Deaf consumers multiple times a day and within any environment (Macdonald, 2015; AVLIC, 2015). However, the mental health of VLIs is not a widely researched topic. The main purpose of this study is to look at internal factors that may increase the risk of vicarious traumatization in Canadian VLIs as well as to conduct exploratory analyses into the relationship between anxiety and vicarious trauma.

VLIs are responsible for accurately facilitating communication between a Deaf person and a hearing person. VLIs who interpret in a mental health setting become third members of what is typically a dyad involving the client and the clinician (Chovaz, 2013). Within a therapeutic triad, communication between the client and clinician is not direct and passes through the VLI, complicating the dynamic of the therapeutic alliance. Recently there has been a shift from viewing VLIs as a conduit for communication to viewing them as cultural and linguistic mediators and advocates of the Deaf community (Corker, 2000). Capital "D" Deaf individuals see themselves as being part of a cultural community of deafness, whereas deaf individuals are

not members of deaf culture (Corker, 2000). All deaf individuals will be referred to as Deaf in this study. Members of the Deaf community are a minority in language and in culture, and often experience oppression (Macdonald, 2015). A Deaf individual may be left out of a conversation, demeaned, treated unfairly, left out of decision-making, labeled as intellectually disabled, or taken advantage of by hearing authorities (Harvey, 2003). Since a Deaf individual relies on a VLI for accurate translation of speech, there is an inherent power differential between each party. Involvement with the Deaf community enables the VLI to attain cultural competency (Shaw, 2014). VLIs who understand Deaf culture can become advocates of Deaf people, but may find it difficult to remain impartial when witnessing Deaf oppression.

There is a dearth in research regarding the mental health of VLIs although they may work with traumatized clients. During therapy, the VLI's role is more passive than the clinician's and requires that the VLI speak in the voice of the client while refraining from adding his or her personal voice to the therapeutic dialogue (AVLIC, 2015). As the interpreter's role is qualitatively different from the clinician's in that he or she acts as a conduit for the client's trauma, interpreters may be at increased risk of vicarious traumatization because they must engage with the client's traumatic experiences cognitively and emotionally (Macdonald, 2015). The clinician is also trained to debrief after sessions with traumatized clients, whereas Canadian VLIs do not receive mental health training. Another difference between the experience of vicarious trauma in the VLI and the clinician is hypothesized to be differing levels of emotional and cognitive empathy felt in response to the client. Davis (1980) broadly defines empathy as the reactions of one individual to the observed experiences of another, but empathy can be divided further into cognitive and emotional subcomponents. Cognitive empathy is described by Harvey (2003) as an individual's ability to see things from another's perspective while maintaining his or

her sense of self as distinct from another. Emotional empathy is described as a state of "psychological fusion" with another wherein the individual feels they are experiencing the same emotions as the other (Harvey, 2003). Previous studies of vicarious trauma in VLIs focused on external factors related to vicarious traumatization, such as an interpreter's years of experience or the amount of time they spent exposed to the traumatized client (Andert & Trites, 2015). No studies to our knowledge have looked at the effect of empathy on vicarious traumatization in the VLI. The current study hypothesizes that cognitive empathy will be negatively correlated with vicarious trauma. We also hypothesize that emotional empathy will be positively correlated with vicarious trauma. An additional exploratory analysis will be conducted to test the relationship between anxiety and vicarious trauma.

Compassion Fatigue Theory

Figley's compassion fatigue theory describes a form of burnout from empathizing with a suffering person (Figley, 2002). The symptoms of compassion fatigue are similar to those of vicarious trauma. Figley's framework describes empathy as a dispositional trait that may put the individual at risk of vicarious traumatization. Though empathy is required to develop a therapeutic alliance, Figley states that connecting too deeply with the client's trauma may cause therapists to suffer (Figley, 2002). Figley's framework can be extended to VLIs, who can be contracted to interpret for clients in settings wherein they are exposed to others' trauma. Compassion fatigue is the result of exposure to trauma, and can result in clinicians using avoidant coping techniques such as disengagement to distance themselves from the client and modulate their feelings of empathy (Sexton, 1999). By controlling his or her feelings of empathy, a clinician is better able to reduce his or her risk of vicarious traumatization. VLIs differ in that they cannot use the same avoidant coping strategies as clinicians, as their job requires them to

focus on traumatic material to accurately interpret it. This reduces the VLI's ability to control their empathic response to others' trauma, placing them at more risk of vicarious traumatization. The current study was conducted within Figley's framework of compassion fatigue as interpreters who strongly emotionally empathize with clients are hypothesized to have increased levels of vicarious trauma compared to those who are able to manage their empathic responses to a client's pain at a cognitive level.

Empathy and Vicarious Traumatization

Several studies have analyzed empathy and its relation to vicarious trauma. Though empathy has been most commonly found as a risk factor for vicarious traumatization, some studies have found that empathy is a positive predictor of vicarious posttraumatic growth in clinicians. Vicarious posttraumatic growth is described as positive outcomes and personal growth experienced by the clinician after working with traumatized individuals (Brockhouse, Msetfi, Cohen, & Joseph, 2011). However, posttraumatic growth has only been found to occur when the clinician witnesses the client's recovery process (Brockhouse et al., 2011; Cohen & Collens, 2012). Most VLIs are hired on contract and the same interpreter may not be present for the same client's recovery, an aspect of their profession that may negate the positive effects of empathy. Empathy has been more commonly linked to vicarious trauma than it has been to posttraumatic growth. There are two typical responses made by professionals who come into contact with the traumatic experiences of others that may alter the strength of their empathic engagement with clients and impact their experience of vicarious trauma. Sexton (1999) found that professionals might firstly react to trauma by avoiding the traumatic material and keeping themselves emotionally and mentally disconnected from the client. Secondly, professionals may also react by over-identifying with the client and their experiences (Sexton, 1999). Disengagement and

over-identification are connected to an individual's levels of cognitive and emotional empathy, with over-identification related to increased emotional empathy and disengagement related to the amount of cognitive distance one is able to keep between the self and another. Harvey (2003) states that both cognitive and emotional empathy effect how severely a VLI experiences vicarious trauma. It is important to measure the contribution of both facets of empathy to a VLI's experience of vicarious traumatization in order to better understand how empathy may be both a protective factor and a risk factor for vicarious trauma.

Cognitive Empathy and Vicarious Trauma

Cognitive empathy is an individual's ability to disengage from the emotional trauma of others and retain his or her sense of self while acknowledging the other's perspective (Harvey, 2003). Rogers (1992) also referred to cognitive empathy as "true empathy," as it is the ability to feel for another person while maintaining the boundary between oneself and another. If the boundary between the self and other is not maintained, Rogers (1992) argues that an individual risks moving from empathizing with another to identification with another. The ability to empathize from a purely cognitive level is commonly conceptualized as a protective factor that reduces the risk of vicarious trauma because the individual is able to understand the client's experience without experiencing the same emotions as the client (Harvey, 2003). A study conducted by Kincheloe (2014) on vicarious trauma and empathy in clinicians found that cognitive empathy, as measured by the perspective taking scale in Davis' Interpersonal Reactivity Index (IRI) was negatively correlated with vicarious trauma. The study indicated that a clinician's risk of vicarious traumatization decreased as their ability to understand the client's perspective increased. Additionally, a qualitative study conducted with six peer-nominated

master therapists suggested that perspective taking was one of many protective practices that reduced the risk of vicarious traumatization in clinicians (Harrison & Westwood, 2009).

Research has found that imagining a scenario from a self-perspective or other-perspective activate different areas of the brain, with self-other differentiation processes rooted in the frontopolar, somatosensory cortex, and right inferior parietal lobe (Ruby & Decety, 2004). The right inferior frontal lobe was found to be important for correct perceptions of agency, as cortical stimulation of this area of the brain induced an out-of-body experience wherein individuals felt they were looking at themselves from a third-person perspective. The same research indicated that the right inferior frontal lobe was integral to maintaining the perspective taking skills that help individuals maintain the self-other differentiation necessary to reduce feelings of emotional distress in response to others (Ruby & Decety, 2004). The tasks that VLIs engage in while interpreting places them in the role of the client, as they must speak and think from the client's point of view. This may limit their ability to maintain the cognitive boundary between the self and the other inherent to perspective taking, causing VLIs to feel emotional distress when working with traumatized clients. Research by Lamm, Batson, and Decety (2007) revealed that imagining how another person feels during a painful situation through other-focused perspective taking was linked to less feelings of personal distress, whereas imagining oneself in another's painful situation was linked to increased feelings of personal distress. Further, research indicated that professionals who managed events cognitively and maintained emotional distance felt less personal distress than those who did not (Regehr et al., 2002). Maintaining emotional distance may be more difficult for VLIs than clinicians because both professions engage with trauma differently. Clinicians are asked to empathically connect with the client to understand their traumatic experiences, but do not vocalize the trauma as if it were their own experience. As VLIs

speak for the client, their level of empathy for the client may be impacted and lead to increased vicarious traumatization.

Emotional Empathy and Vicarious Trauma

Research has indicated that emotional empathy is a risk factor for developing vicarious trauma (Pearlman & Saakvitne, 1995). Emotional empathy is a natural tendency to feel what another feels and is described as "a state of psychological fusion with another" (Harvey, 2003, p. 209). Empathizing with someone solely on an emotional level may cause an individual to experience personal distress in response to the other's trauma, a phenomenon also referred to as "emotional contagion" (Nummenmea, Hirvonen, Parkkola, & Hietanen, 2008). A study (Nummenmea et al., 2008) of the neurological basis of emotional empathy found that individuals had an increased subjective experience of fear, anger, and disgust when asked to mentally simulate how the victims in photographs would think and feel in a violent situation. This emotionally reactive response was associated with higher activation of mirror neurons in the inferior parietal lobule (IPL), suggesting that the area was associated with the emotional contagion experienced by witnessing highly emotional events.

Interpreters must speak in the voice of traumatized clients while interpreting, placing them at a unique risk for the emotional contagion associated with emotional empathy because they may more easily picture the events happening to themselves. A study by Walton (1997) found that increased feelings of identification with the traumatized individual resulted in increased personal distress. Other research conducted with foreign language interpreters has indicated that speaking in first-person perspective was a risk factor for vicarious traumatization because it increased identification with the client and reduced emotional separation from the traumatic material (Splevins, Cohen, Joseph, Murray, & Bowley, 2010). The interpreters who

were interviewed stated that their empathy for clients changed to identification wherein they felt as if they were experiencing their client's emotions. Interpreters attributed their increased identification with the client to verbatim translation of the client's trauma (Splevins et al., 2010). Bontempo and Malcolm's research also supports that the use of first-person voice increases the risk of vicarious traumatization in interpreters (as cited in Macdonald, 2015, p.8). Therefore, there are distinct aspects of the interpreting role that may increase emotional empathy and reduce cognitive empathy in the VLI, both of which pose potential risks of vicarious traumatization. The ability, or inability, to maintain emotional distance from a client is a facet of empathy that may alter VLIs' levels of cognitive and emotional empathy in a way that increases their risk of vicarious traumatization.

Emotional Distance as a Link between Cognitive and Emotional Empathy

Though compassion fatigue theory underscores the costs of empathy in therapeutic relationships, empathic engagement alone is not a significant risk factor for vicarious trauma (Regehr et al., 2002; Badger et al., 2008). The amount of emotional distance from the client's trauma also impacts an individual's risk of vicarious traumatization. The ability to maintain emotional distance from a client's trauma has been shown to decrease the risk of vicarious traumatization by decreasing the amount of personal distress an individual feels in response to another's trauma (Badger et al., 2008). VLIs channel traumatic content and are actively involved in encoding, decoding, and verbalizing traumatic experiences (Chovaz, 2013; Andert & Trites, 2015). VLIs cognitively engage with the material in a way that increases their concentration on what the Deaf consumer is signing because the interpretation from American Sign Language to English is simultaneous and cognitively demanding (McDermid, 2014). Engaging in these cognitive tasks may increase a VLI's level of absorption in the client's traumatic material.

Absorption is an individual's ability to experience a client's feelings, and was a significant predictor of PTSD in social workers along with empathy (Badger et al., 2008). The fact that VLIs must place themselves in the role of the client while interpreting is likely to increase their emotional identification with the client because VLIs are limited in their ability to emotionally or cognitively disengage from trauma. The lack of emotional and cognitive separation from the client's trauma may thus distinctively influence VLIs' levels of cognitive and emotional empathy, such that their ability to maintain the self-other boundary is decreased and their personal distress in response to the client's experience is increased.

The Link Between Trauma and Anxiety

The relationship between traumatization and anxiety has repeatedly been supported, and though some studies conclude that vicarious trauma is not as severe as firsthand trauma (Motta, Joseph, Rose, Suozzi, & Leiderman, 1997), other studies have found that the symptoms of vicarious trauma are similar in intensity to symptoms of PTSD (Lerias & Byrne, 2003; Buchanan, Anderson, Uhlemann & Horwitz, 2006; Finklestein, Stein, Greene, Bronstein, & Solomon, 2015). As vicarious trauma and PTSD are negative outcomes of direct or indirect trauma, vicarious traumatization symptoms may correlate with anxiety symptoms. A study that examined the effects of type of trauma on the manifestation of PTSD in children found that the type of trauma, whether primary or vicarious, did not result in differing levels of psychopathology. Their findings also revealed that those with PTSD showed higher levels of anxiety and depression than their non-clinical peers regardless of traumatic experience (Saigh, 1991). A study supporting the view that vicarious trauma is similar to firsthand trauma found that therapists who were indirectly exposed to trauma suffered from symptoms associated with PTSD, such as hyperarousal, avoidance, and intrusive thoughts (Finklestein et al., 2015).

Additionally, a meta-analysis found that PTSD scores were positively correlated with scores of anxiety and depression (Aldemir, Dalbudak, & Topcu, 2015). Since research indicates that the negative effects of trauma are the same whether the traumatic experience is personal or indirect, higher symptoms of vicarious trauma will likely correlate with increased anxiety symptomology within the VLI. However, no studies to our knowledge have examined the relationship between vicarious trauma and anxiety symptoms and it is unclear whether vicarious trauma leads to anxiety scores or whether populations with anxiety are at greater risk of vicarious traumatization. We anticipate that VLIs as a group will have high levels of vicarious trauma, and thus we anticipate that they will also collectively have high levels of anxiety.

The Current Study and Hypotheses

VLIs are at a unique risk for vicarious traumatization due to job factors that may increase their empathic engagement with the client, such as decreased emotional separation and increased identification with the Deaf client. Previous research on empathy and vicarious traumatization has not examined the relationship in the context of the interpreter. Studies with therapists often focused only on emotional empathy as a risk factor, and most research did not examine the contributions of both cognitive and emotional empathy to vicarious trauma. Those that did mention cognitive empathy indicated that it was not relevant to therapists' experience of vicarious trauma. However, the aspects of empathy that are relevant to VLIs may differ from therapists because of the differing way each profession engages with the client's trauma. Previous research specific to vicarious trauma in VLIs also limited its scope to external risk factors. The current study is unique because it analyzes the effect of both cognitive and emotional empathy on vicarious trauma in the VLI while considering how the VLI's unique role

in the therapeutic triad may cause their empathy levels to differ from empathy levels in clinicians.

The next logical steps for research are to determine whether differing levels of cognitive and emotional empathy contribute to a VLI's vicarious traumatization. It is hypothesized that cognitive empathy will be negatively correlated with vicarious trauma such that interpreters who are better able to maintain the self-other boundary will experience less vicarious trauma than those who cannot. It is also hypothesized that emotional empathy will be positively correlated with vicarious trauma such that interpreters who feel more personal distress in response to the trauma of others will more severely experience vicarious trauma than those who do not. An exploratory analysis between anxiety and vicarious trauma will also be conducted to see whether there is a relationship between the two variables in VLIs.

Method

Participants

95 Canadian visual language interpreters (12 male, 83 female) were recruited on a volunteer basis from across Canada (Mode = 35-44, Age range = 25-65+). Although 95 participants began the survey, only 85 fully completed the surveys (11 male, 74 female). Data from the incomplete surveys were excluded from this study's data analyses. Informed consent was obtained from all participants.

Materials

Demographic Questionnaire. A 10-item demographic questionnaire was created by the primary researcher asking participants to indicate their age, gender, hearing status, work experience, education, work environment (i.e. mental health, medical, legal, emergency, etc.), relationship status, current job status, whether they had graduated from an interpreter training

program and whether they found these programs beneficial (see Appendix A).

Secondary Traumatic Stress Scale (STSS). A 17-item self-report measure developed by Bride and colleagues (2004) was used to assess the extent to which individuals are affected by their work with traumatized clients as well as how frequently they experience the symptoms of secondary traumatic stress. The STSS has three subscales targeting different symptom groupings of secondary traumatic stress: Arousal, intrusion, and avoidance. The phrasing of the items on the scale was revised to better reflect the experiences of VLIs. Responses were given on a 5-point Likert scale ranging from 1 = "Never" to 5 = "Very Often", e.g. "My heart started pounding when I thought about my work with clients" (see Appendix B). Items were scored such that higher numbers indicated higher levels of secondary traumatic stress. A total cutoff score of 38 is used by clinicians to determine whether clients are suffering from a moderate level of vicarious trauma. Participants in this study with a score above 38 were also considered to be suffering from a clinical level of vicarious trauma. A reliability analysis conducted by Bride for the original scale found the reliability to be very good, $\alpha = 0.93$.

Interpersonal Reactivity Index (IRI). A 28-item self-report measure developed by Davis (1980) asking participants to rate their subjective feelings of empathy on an alphabetic scale ranging from A to E where A= "Does not describe me well" and E= "Describes me very well." Items were scored such that higher numbers indicated a higher level of empathy. The measure is divided into four subscales, each containing seven items. Two of the four subscales were used for the current study. The subscales are:

Perspective taking. Measures the tendency for one to spontaneously adopt the psychological point of view of others and is a measure of cognitive empathy, e.g. "I try to look at everybody's side of a disagreement before I make a decision." Reliability analysis indicated an

alpha coefficient of .76.

Personal distress. Measures "self-oriented" feelings of anxiety and unease in tense interpersonal settings and is a measure of emotional empathy, e.g. "In emergency situations, I feel apprehensive and ill-at-ease" (see Appendix C). Reliability analysis indicated an alpha coefficient of .78.

Beck Anxiety Scale (BAS). A 21-item self-report questionnaire developed by Beck and colleagues (1988) was used to gauge the extent that participants felt symptoms of anxiety within the past month on a 4-point Likert scale ranging from 0 (*Not at all*) to 3 (*Severely—It bothered me a lot*), e.g. "Numbness or tingling," or "Unable to relax" (see Appendix D). Items were scored such that higher numbers indicated a higher level of anxiety. A total score of 0-9 is considered minimal anxiety, 10-16 indicates mild anxiety, 17-29 indicates moderate anxiety, and 30-63 indicates severe anxiety. Participants in the current study who scored above a 17 were considered to be suffering from anxiety. Reliability analyses previously conducted for this scale was found to be very good, $\alpha = 0.94$.

Procedure

Questionnaires and operational definitions of constructs were researched and chosen by the student researcher prior to the study. As this study is a part of a larger study, the primary researcher uploaded this study's questionnaires to Qualtrics along with the questionnaires of two other researchers and an online consent form, for a total of seven questionnaires. The Research Ethics Review Committee (RERC), the King's University College's ethics board, approved this study. Participants were recruited during the L.E.A.D. conference held at King's University College in June, where the study was advertised during a presentation as well as in written form via a flyer that included a link to the survey. Following the conference, the primary researcher's

contacts were used to recruit additional participants through email across Canada, and interpreters were also contacted through AVLIC, the Canadian Association of the Deaf (CAD), the Ontario Association of the Deaf (OAD), the Western Association of Visual Language Interpreters (WAVLI), the Association of Sign Language Interpreters (ASLI), and the Ontario Interpreter Service (OIS). As this study is national, interpreters were only recruited through Canadian interpreting organizations. No remuneration was used to recruit participants. In all forms of recruitment, visual language interpreters were asked to participate in an online survey hosted on Qualtrics, Western University's online survey software tool. If participants agreed to participate in the study by signing an online consent form, they were then able to access the questionnaires. Participants completed a demographic questionnaire, Davis' Interpersonal Reactivity Index to assess cognitive and emotional empathy, Bride's Secondary Traumatic Stress Scale to assess vicarious trauma and the Beck Anxiety Inventory to assess anxiety symptoms, in that order. Participants' responses were coded by number and did not include personal information so as to preserve their confidentiality. Only the primary researcher and this study's student researcher had access to the response data. Participants were given an unlimited amount of time to complete the questionnaires. After completion of the questionnaires, participants were thanked for their contribution to research about visual language interpreters. By way of debriefing, participants received access to the study's results at its culmination via the Centre of Deaf Education and Accessibility Forum (CDEAF) website. A copy of the consent form can be found in Appendix E.

Results

Analyses were conducted to determine whether there is an association between VLIs' levels of cognitive and emotional empathy and vicarious trauma. The independent variable was

empathy and the dependent variable was vicarious trauma. Exploratory analyses were also conducted between anxiety and vicarious trauma to examine the relationship between the two variables.

Frequencies were run on all participants using SPSS. The majority of participants were 35 to 44 years old (n=29), with an age range of 25 to over 65. The majority of participants had been interpreting for 11 to 15 years (n=20). Frequencies were run to see which environments VLIs commonly worked in and found that the majority of VLIs reported working in multiple settings. The greatest number of interpreters indicated that they interpreted in the general community (n=83), while the fewest number of interpreters indicated that they worked in a theatre or media setting (n=20). Most VLIs held a bachelor's degree as their highest level of education (n=32), but a large number had trade and technical vocational training as their highest level of education (n=23). 10 of the 85 VLIs indicated being a member of a professional interpreting organization. More detailed information about participant gender, age, years of experience, and work setting can be found in Table 1.

Table 1

Frequency Analysis of Participants' Gender, Age, Years of Experience and Work Setting

Variable	Frequency	Percent
Gender		
Male	11	12.9
Female	74	87.1
Age		
25-34	20	23.5
35-44	29	34.1
45-54	22	25.9
55-64	12	14.1
65+	2	2.4
Years of Experience		
Under 5	11	12.9
6-10	16	18.8
11-15	20	23.5
16-20	10	11.8
21-30	19	22.4
31-50	9	10.6
Work Setting		
Medical	71	83.5
Educational	68	80.0
Community	83	97.6
Mental Health	65	76.5
Legal	47	55.3
Emergency	63	74.1
Conferences	60	70.6
Theatre	25	29.4
Designated Staff	30	35.3
Media	20	23.5

Note. N=85. Participants were able to select multiple options for the work setting variables, so frequencies and percentages for work setting do not add up to 100.

Reliability analyses were conducted on each scale using SPSS. Reliability analyses were conducted on all 17 secondary traumatic stress items in the STSS. Cronbach's Alpha revealed that all STSS items were highly reliable, α=0.90. Reliability analyses conducted on each of the STSS's subscales revealed Cronbach's Alpha to be 0.76 for Arousal, 0.77 for Intrusion, and 0.74 for Avoidance. Reliability analyses were also conducted on all 7 perspective taking items in the IRI. Cronbach's Alpha revealed that the perspective taking subscale was highly reliable, α=0.76. A reliability analysis conducted on the 7 IRI personal distress subscale items also revealed that all items were reliable, α=0.71. A reliability analysis conducted in the BAS revealed that the anxiety scale was highly reliable, α=0.89. Composite variables were created for vicarious trauma by averaging across all items in the STSS, personal distress by averaging across all items in the IRI subscale, perspective taking by averaging across all items in the IRI subscales, and anxiety by averaging across all items in the BAS.

Descriptive statistics were run using SPSS on all 85 participants. The average total score on the STSS was 33.10 (*M*=33.10, *SD*=14.14), just below the clinical range for moderate secondary traumatic stress (>38). 30.5% of VLIs scored above the clinical range for secondary traumatic stress (n=26). Males on average scored slightly higher on the STSS (*M*=35.18, *SD*=13.79) than females (*M*=32.74, *SD*=14.25). VLIs' average total score was relatively high for each of the STSS subscales: Avoidance (*M*=13.83, *SD*=6.06), intrusion (*M*=8.61, *SD*=4.17), and arousal (*M*=10.61, *SD*=5.10). VLIs on average scored a 6.75 on the BAS, indicative of minimal clinical anxiety symptoms, (*M*=6.75, *SD*=6.82). 17% of VLIs had an anxiety score above the clinical cutoff for moderate anxiety (n=15). VLIs' average total score on the perspective taking scale was 18.45 (*M*=18.45, *SD*=4.77), slightly higher than the population average reported by Davis in the original validation study (*M*=17.96), (Davis, 1983). VLIs' mean score on the

personal distress scale was 7.13, (M=7.13, SD=4.08); thus, VLIs on average scored lower on personal distress empathy than the population average found in Davis' initial validation study (*M*=12.28), (Davis, 1983).

Correlational analyses between all main variables of this study including STSS subscales can be found in Table 2. A Pearson correlational analysis was conducted using the composite STSS variable and perspective taking variable to examine the relationship between vicarious trauma and cognitive empathy. Analyses revealed there was no significant correlation between total STSS score (*M*=33.10, *SD*=14.14) and perspective taking (*M*=2.64, *SD*=0.68), $r(83)=.01$, $p=.96$, *ns*. There were also no significant correlations between perspective taking and the STSS subscales.

A second Pearson correlational analysis was conducted using the composite STSS variable and the personal distress variable to examine the relationship between vicarious trauma and emotional empathy. Analyses revealed a weak positive relationship between total STSS score (*M*=33.10, *SD*=14.14) and personal distress (M=7.13, SD=4.08), with levels of vicarious trauma increasing as levels of personal distress increased, $r(83)=.23$, $p=.03$. This indicates that individuals with higher emotional empathy are more likely to experience vicarious trauma than individuals with lower emotional empathy. Personal distress was found to have a significant positive relationship with the arousal and intrusion STSS subscales.

A third Pearson's correlational analysis was conducted for exploratory purposes between the composite STSS variable (*M*=33.10, *SD*=14.14) and composite anxiety variable (*M*=6.75, *SD*=6.82). Analyses revealed a moderate positive relationship between STSS score and anxiety, with levels of anxiety increasing as levels of STSS increased, $r(83)=.67$, $p < .001$. Anxiety was also found to have a significant moderate positive relationship with all STSS subscales.

Table 2

Bivariate correlations between STS, Arousal, Avoidance, Intrusion, Empathy and Anxiety

Variable	1	2	3	4	5	6	7
STS	1						
Arousal	.93**	1					
Avoidance	.95**	.84**	1				
Intrusion	.87**	.71**	.74**	1			
Perspective Taking	.01	-.02	.05	-.02	1		
Personal Distress	.23*	.26*	.11	.28**	-.29**	1	
Anxiety	.67**	.69**	.59*	.56**	-.07	.33**	1

Note. N=85. Variables were coded so that higher numbers indicated higher levels of STS, perspective taking, personal distress, and anxiety.
*$p < .05$, **$p < .01$

Multiple regression analyses were conducted post-hoc to examine whether personal distress predicted vicarious trauma independently of anxiety and other potential confounding variables. Vicarious trauma was used as the criterion variable, and personal distress, perspective taking, anxiety, age, years of experience, gender, and interpreter training were used as predictor variables (see Table 3). Model 1 indicates the regression analysis done using only empathy and the demographic variables, and Model 2 indicates the regression analysis done using empathy, the demographic variables, and anxiety. The multiple regression model with all seven predictors produced R^2=.489, $F(7,77)=10.54$, $p<.01$. Only the anxiety variable was an independent predictor of vicarious trauma, β=.67, $p < .001$. This indicates that anxiety symptoms predicted vicarious traumatization over and above the variance predicted by personal distress, β=.01, p=.961, *ns*. Interpreter age, years of experience, gender, and interpreter training were not significant predictors of vicarious traumatization.

Table 3

Results from Regression Analysis for Variables Predicting Vicarious Trauma (VT)

	Model 1	Model 2
Variable	β	β
Perspective Taking	.138	.106
Personal Distress	.236*	.005
Gender	.035	.142
Age	.363	.266
Years of Experience	-.309	-.227
Interpreter Training	.242	-.107
Anxiety		.671**
R^2	.117	.489
F for change in R^2	1.73	10.54**

Note. N=85. Gender was coded such that female – 0 and male – 1. Age, years of experience, and interpreter training were continuous variables such that higher numbers indicated a greater age, more years of experience, and reception of formal interpreter training.
*p < .05. **p < .01.

Given that personal distress was no longer a significant predictor of vicarious trauma after controlling for anxiety, an additional correlational analysis was run post-hoc to examine the relationship between anxiety and personal distress. A weak positive correlation was found between the two variables, such that as levels of personal distress increased levels of anxiety increased, $r(83)=.33$, $p=.002$.

To explore further whether certain groups of VLIs were at more risk of vicarious traumatization than others, additional correlational analyses were run post-hoc between vicarious trauma and VLIs' years of interpreting experience and age.

A Pearson's correlation between VLIs' age (Mode=35-44, Range=25-65+) and the composite STS variable did not reveal a significant relationship, $r(83)=-.07$, $p=.54$, *ns*. Although the results were not significant, the use of age ranges on the demographic questionnaire rather than an exact age reduced the statistical power of this analysis. Further research is needed to examine the exact relationship between VLI age and vicarious trauma.

A Pearson's correlation between years of interpreting experience (Mode=11-15, Range= <5-50) and the summed STSS variable did not find a statistically significant relationship, $r(83)=-.13$, $p=.235$, *ns*. Because participant responses were given as a range, the analyses had reduced statistical power. Further research is needed to make clear the exact relationship between VLI years of experience and vicarious trauma.

Discussion

This study was conducted to examine vicarious trauma in Canadian VLIs, as well as to see whether levels of empathy had a significant relationship with vicarious trauma. The first hypothesis was that increased cognitive empathy would correlate with lower levels of vicarious trauma, and the second hypothesis was that increased emotional empathy would correlate with

higher levels of vicarious trauma. This study found that the majority of VLIs scored below the clinical cutoff for vicarious trauma. This study also failed to find evidence that cognitive empathy acts as a protective factor against vicarious traumatization. The idea that emotional empathy is a risk factor for vicarious trauma was initially supported, but multiple regression analyses found that the relationship between emotional empathy and vicarious trauma was no longer significant after controlling for VLIs' levels of anxiety.

Vicarious Trauma in VLIs

The results of this study were unexpected. Although 30% of VLIs would be considered vicariously traumatized, the majority of VLIs did not score above the clinical cutoff. There are a few possible explanations for this result. Because Canadian VLIs work on contract, it is possible any exposure to clients' trauma was too brief to manifest in vicarious trauma. Other studies on vicarious trauma focused on professions such as social workers and paramedics that often encountered traumatized individuals multiple times a day (Badger et al., 2008; Regehr et al., 2002). VLIs are not guaranteed to encounter trauma every time they interpret, and working in multiple settings may thus act as a protective factor against vicarious traumatization.

It is also possible that strong feelings of vicarious trauma were not reported because VLIs felt as though admitting to vicarious traumatization could negatively impact their job. Similar reasoning about professional competence was used to explain low reports of vicarious trauma in clinicians (Nummenmaa et al., 2008). The majority of participants not reaching the clinical cutoff for vicarious trauma may have been a reflection of the impartiality stipulation in the VLIs' professional Code of Ethics that requires VLIs to suppress personal emotional reactions to the material they are interpreting (AVLIC, 2015). By failing to remain impartial, a VLI would be required to withdraw their services from the assignment if they were no longer able to provide

professional service (AVLIC, 2015). Thus, VLIs may have felt pressure to underreport their experience of vicarious trauma because reporting truthfully may have made them appear incompetent or incapable of professionally performing their role as per the Code of Ethics.

Although post-hoc correlational analyses were conducted to see whether VLIs' low vicarious trauma scores could be due to the VLI's age or years of experience interpreting, the use of ranges for both of these variables reduced the statistical power of the analyses. Other studies support the idea that as therapists age, they gain more experience working with traumatized individuals and are at less risk of vicarious traumatization (Walton, 1997; Chrestman, 1995). Although the results of this study did not find these variables to be significantly related to vicarious trauma, there were weak negative relationships found between age, experience and vicarious trauma and the use of self-reported age and years of experience rather than ranges may have revealed a significant result.

The Relationship between Vicarious Trauma and Empathy

The hypothesis that emotional empathy is positively correlated with vicarious trauma in VLIs was initially supported using an overall STS score, and personal distress empathy was further found to positively correlate with both the arousal and intrusion subscales on the STSS. The initial positive correlation between emotional empathy and vicarious trauma is consistent with other studies that found emotional empathy was a risk factor for vicarious trauma, (Walton et al., 1997; Ruby et al., 2004; Nummenmaa et al., 2008). Participants overall tended to score low on measures of personal distress and on measures of intrusion and arousal, indicating that VLIs who are not prone to emotional contagion when witnessing or interpreting others' traumatic events are also at less risk of vicarious trauma. The results of this study may support that VLIs who are highly prone to self-oriented feelings of distress in response to others are at

higher risk of vicarious traumatization, or that vicarious trauma causes VLIs to feel more self-oriented distress when interpreting for traumatized clients. However, multiple regression analyses found that personal distress was not a significant predictor of vicarious trauma after controlling for anxiety.

The fact that emotional empathy as measured by personal distress was no longer a significant predictor of vicarious trauma after controlling for anxiety seems to indicate that empathy is only related to vicarious trauma insofar as it is related to feelings of anxiety in the individual. The feelings of empathy measured by the personal distress subscale are feelings of stress and "personal anxiety and unease" in tense interpersonal settings, and the subscale was found in this study to have a weak positive correlation with anxiety (Davis, 1980). One would expect the anxiety and personal distress scales to be more strongly correlated if they both measured the same construct. The personal distress score could be interpreted as feelings of anxiety in interpersonal settings and in response to others, and the anxiety score may be interpreted as general feelings of anxiety that persist outside of an interpersonal setting. It is possible that reacting emotionally to others' pain leads to increased anxiety, or that people who are highly anxious are more likely to experience personal distress in stressful interpersonal situations. This link between anxiety and personal distress might also explain why there was no significant relationship between cognitive empathy and vicarious trauma.

Contrary to previous findings with other populations, the results of this study did not find any evidence to support the claim that cognitive empathy is a protective factor against vicarious traumatization in VLIs (Kincheloe et al., 2014; Lamm et al., 2007; Nummenmaa et al., 2008). Consistent with other findings, the correlational analysis run in the current study found that perspective taking and personal distress had a weak negative relationship (Clark, 2007). Given

the negative relationship between the empathy components, cognitive empathy may not have been significantly correlated with vicarious trauma because it does not directly relate to anxiety, but relates to anxiety through personal distress and a reduced ability to maintain a self-other boundary. All typically functioning individuals are able to understand another's traumatic experiences from an other-oriented perspective, but the ability or inability to use these perspective taking skills would not lead to feelings of anxiety. However, not everyone feels personally distressed in the face of another's trauma, and self-oriented feelings of distress are closely related to feelings of anxiety. No studies on vicarious trauma and empathy to our knowledge have considered anxiety as a confound variable. It is possible that correlations between emotional empathy and vicarious trauma found in other studies would also be better explained by anxiety.

Although this study was based on the assumption that VLIs would have increased empathy for clients because they must focus on traumatic material, it is possible that feelings of empathy do not factor into a VLI's role as much as it would a clinician's. Empathy is important for building a therapeutic relationship, so it is integral for a clinician to feel empathetic toward a client (Figley, 2002). VLIs are expected to be present at the meeting to facilitate communication but are not required to become emotionally involved in the session (AVLIC, 2015). Because the simultaneous translation of ASL into English is a cognitively demanding task, it is also possible VLIs are more focused on the mechanics of interpreting than on the content. Since interpreting requires concentration and accuracy, the act of interpreting itself may serve as a method by which VLIs can emotionally distance themselves from the client (Sexton, 1999; Daro & Fabbro, 1994).

The Relationship between Vicarious Trauma and Anxiety

An exploratory analysis conducted on the variables anxiety and vicarious trauma found a moderate positive relationship between the two variables. Although a large number of interpreters scored above the clinical cutoff for STS and anxiety, the average total score for both variables was below the clinical cutoff. Although previous research has found that the severity of vicarious trauma is not as severe as PTSD (Motta et al., 1997), this study lends support to other findings that vicarious trauma is related to anxiety in the same way that PTSD is (Aldemir et al., 2015).

Although the current study found anxiety and vicarious trauma to be correlated, no conclusion about causality can be drawn from this relationship. It may be the case that vicarious traumatization is required for a VLI to manifest symptoms of anxiety when interpreting, or that VLIs who are highly anxious are more likely to experience vicarious trauma. The presence of a moderate positive correlation may also indicate that anxiety and vicarious trauma are related in a similar way to PTSD and anxiety. Future studies should consider exploring the relationship between anxiety and vicarious trauma further in order to discern the directionality of the relationship.

Limitations and Future Research

A limitation of this study is that empathy is not consistently defined and each empathy measure used seems to reveal different results in the studies wherein empathy is a variable. Until there is a standardized definition and measure of empathy, there may not be consistent findings or conclusive results between studies conducted on vicarious trauma and empathy in various populations. A more effective way to measure the effect of empathy on vicarious trauma may be to use a physiological measure of empathy while VLIs are in the process of interpreting for traumatized individuals.

Future research should use scales specifically designed to measure emotional distance. Although emotional distance is a component of empathy and links cognitive and emotional empathy, scales specifically designed to measure emotional distance may better measure empathy in terms of self-other separation than the subscales on the IRI. As broad measures of cognitive and emotional empathy did not significantly correlate with vicarious trauma, delving into a variable designed to assess distance from trauma may yield significant findings. The regression model including anxiety only explained about 49% of the variance, so further research should also examine other factors that can impact vicarious trauma in VLIs.

General Conclusions and Implications

Although the current study's two primary hypotheses were not validated, this study adds to the limited research base focused on VLIs. Knowledge that empathy may only be a significant risk factor for vicarious trauma insofar as it contributes to feelings of anxiety is information that can be considered when designing training programs or interventions for VLIs. The finding that VLIs experience vicarious traumatization and anxiety supports the idea that VLIs are at risk for vicarious trauma despite working across a variety of settings. Due to the relationship found between anxiety and vicarious trauma, it is important that interpreters who are feeling significant levels of personal distress and anxiety have opportunities for debriefing after emotional interpreting sessions and that they learn to recognize the symptoms of vicarious trauma.

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Appendix A

Demographic Questionnaire

Thanks for completing this form.

Your responses will only be coded as a number to preserve confidentiality.

What is your age?

- ○ 18 - 24
- ○ 25 - 34
- ○ 35 - 44
- ○ 45 - 54
- ○ 55 - 64
- ○ 65 and over

What is your gender?

- ○ Male
- ○ Female
- ○ Other

Are you a Deaf Interpreter?

- ○ Yes
- ○ No

How many years have you been working as an interpreter?

- ○ Under 5
- ○ 6 - 10
- ○ 11 - 15
- ○ 16 - 20
- ○ 21 - 30
- ○ 31 - 50

What is your highest level of education?

- ○ Some high school
- ○ High school graduate
- ○ Bachelors
- ○ Masters
- ○ PhD.D
- ○ Trade/technical vocational training
- ○ Other

Please check all settings in which you interpret.

- ☐ Medical
- ☐ Educational

- [ ] Community
- [ ] Mental health
- [ ] Legal
- [ ] Emergency
- [ ] Conferences
- [ ] Theatre
- [ ] Designated staff
- [ ] Media

What is your relationship status?

- ○ Single, never married
- ○ Married or domestic partnership
- ○ Widowed
- ○ Divorced
- ○ Separated

Do you have children?

- ○ Yes
- ○ No

Are you currently

- [ ] Employed for wages
- [ ] Self-employed
- [ ] Retired
- [ ] A student
- [ ] Unable to work
- [ ] Student
- [ ] Unemployed

Did you graduate from an Interpreter Training Program?

- ○ Yes
- ○ No

Did you receive any formal training in mental health interpreting during your Interpreter Training Program?

- ○ Yes
- ○ No

If you responded yes to the above question, was this enough training to work effectively in a mental health setting?

- ○ Yes
- ○ No

Are you a member of AVLIC?

- Yes
- No

Are you a member of a provincial interpreter association?

- Yes
- No

Appendix E

Informed Consent Form
Introduction

The purpose of this study is to explore vicarious trauma in visual language interpreters. There is little research in this area regarding Canadian interpreters and we are interested in contributing to the knowledge base. Visual language interpreters may be exposed repeatedly to distressing situations in mental health settings without effective ways to debrief. This may ultimately affect your own mental health in terms of life satisfaction.

Procedure

Your participation involves completing a demographic form (without any identifying information) as well as 5 questionnaires. The questionnaires will be conducted with an online Qualtrics-created survey. Following analysis of the data, a general description of the results will be made available on the CDEAF website.

Risks/Discomforts

Risks are minimal for involvement in this study. However, you may feel emotionally uneasy when asked to make judgments based on the questions. Although we do not expect any harm to come upon any participants due to electronic malfunction of the computer, it is possible though extremely rare and uncommon.

Benefits

There are no direct benefits for participants. We are hopeful however that your participation in this study will contribute to the interpreting profession in terms of best practice guidelines.

Confidentiality

All data obtained from participants will be kept confidential and will only be reported in an aggregate format (by reporting only combined results and never reporting individual ones). All questionnaires will be concealed, and no one other than the primary investigator and assistant researchers will have access to them. The data collected will be stored in the HIPPA-compliant, Qualtrics-secure database until it has been deleted by the primary investigator.

Compensation

There is no direct compensation to the participant.

Participation

Participation in this research study is completely voluntary. You have the right to withdraw at any time or refuse to participate entirely. If you desire to withdraw, please close your internet

browser and notify the principal investigator at this email: cathy.chovaz@uwo.ca and your responses will be deleted.

Questions about the Research

If you have questions regarding this study, you may contact Dr. Cathy Chovaz at cathy.chovaz@uwo.ca.

If you have an ethics-related concern with this study, please contact ,Dr. Renée Soulodre-La France
Associate Academic Dean
King's University College
519-433-3491 ext. 4424
or email rsoulodr@uwo.ca

I have read, understood, and printed a copy of the above consent form and desire of my own free will to participate in this study.

- ○ Yes
  ○ No